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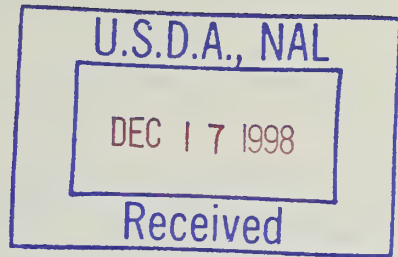
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1973

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UNITED STATES STANDARDS

for grades of

CANNED LEAFY GREENS

First Issue
As Amended

EFFECTIVE SEPTEMBER 1, 1973

UNITED STATES DEPARTMENT OF AGRICULTURE
AGRICULTURAL MARKETING SERVICE
FRUIT AND VEGETABLE DIVISION
PROCESSED PRODUCTS STANDARDIZATION AND INSPECTION BRANCH

These standards supersede the standards which have been in effect since May 8, 1971

This is the first issue, as amended, of the United States Standards for Grades of Canned Leafy Greens.

These standards were published in the Federal Register of April 13, 1968 (33 F.R. 5741) to become effective May 13, 1968.

These standards were amended effective May 8, 1971 (36 F.R. 8557), revising the format of Table III and IV and July 26, 1973 (38 F.R. 19957) to expand Table III.

These standards are included in the Code of Federal Regulations, Title 7-- Agriculture, Part 52.

This grade standard is issued under authority of the Agricultural Marketing Act of 1946, which provides for the issuance of official U.S. grades to designate different levels of quality for the voluntary use of producers, buyers, and consumers. Official grading service is also provided under this Act, upon request of the applicant, and upon payment of a fee to cover the cost of the service.

As is the case of other standards for processed fruits and vegetables, these standards are designed to serve as a convenient basis for sales, for establishing quality control programs, and for determining loan values. They will also serve as a basis for the inspection of this commodity by Federal inspection service, which is available for the inspection of other processed products as well.

These standards are issued by the Department after careful consideration of all data and views submitted and the Department welcomes suggestions which might aid in improving these standards in future revisions. Comments may be submitted to, and copies of these standards obtained from:

Chief, Processed Products Standardization
and Inspection Branch
Fruit and Vegetable Division, AMS
U.S. Department of Agriculture
Washington, D.C. 20250

UNITED STATES STANDARDS FOR GRADES OF

CANNED LEAFY GREENS¹

EFFECTIVE SEPTEMBER 1, 1973

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¹ Compliance with the provisions of these standards shall not excuse failure to comply with the provisions of the Federal Food, Drug, and Cosmetic Act or with applicable state laws and regulations.

SCORE SHEET

52.6094 Score sheet for canned leafy greens.

Authority: The provisions of this subpart issued under Sec. 205,
60 Stat. 1090; 7 U.S.C. 1624.

PRODUCT DESCRIPTION

§52.6081 Product description.

(a) "Canned Leafy Greens" (other than spinach), means the product properly prepared from the succulent leaves of any one of the plants listed under §52.6082 "Types" and packed with the addition of water in hermetically sealed containers and sufficiently processed by heat to prevent spoilage. The products may be acidified and/or seasoned with one or more of the acidifying or seasoning ingredients and in a quantity permitted under the Federal Food, Drug, and Cosmetic Act.

TYPES, STYLES, AND GRADES

§52.6082 Types.

(a) The following types are defined under the Standards of Identity for Canned Vegetables (21 CFR 51.990) issued pursuant to the Federal Food, Drug, and Cosmetic Act:

- (1) Collards.
- (2) Kale.
- (3) Mustard greens.
- (4) Turnip greens.

(b) Other types included in this subpart, but not covered by the Standards of Identity for Canned Vegetables are:

- (1) Mixed leafy greens -- consists of a substantial mixture of any two of the types listed in paragraph (a) of this section.
- (2) Poke salad -- consists of leaves and adjoining stem of the pokeberry plant (*phytolacca Americana*).

§52.6083 Styles.

(a) "Whole leaf" consists substantially of the whole leaf and adjoining portion of stem.

(b) "Cut" or "sliced" consists of the leaves and adjoining portion of stem that has been cut predominantly into large pieces approximating 3/4 inch or more in the longest dimension or cut predominantly into approximate strips.

(c) "Chopped" consists of the leaves and adjoining portions of the stem that have been cut predominantly into small pieces less than approximately 3/4 inch in the longest dimension.

(a) "U.S. Grade A" (or "U.S. Fancy") is the quality of the product that has a good flavor and odor characteristic of the type and has an attractive appearance and eating quality within the limitations as specified in the subpart with respect to: (1) color; (2) character; (3) damage; and (4) harmless extraneous material.

(b) "U.S. Grade B" (or "U.S. Extra Standard") is the quality of the product that has a good flavor and odor characteristic of the type and has a reasonably attractive appearance and eating quality within the limitations as specified in the subpart with respect to: (1) color; (2) character; (3) damage; and (4) harmless extraneous material.

(c) "Substandard" is the quality of the product that fails to meet the requirements for "U.S. Grade B".

DEFINITIONS OF TERMS AND SYMBOLS

§52.6085 Definitions of terms and symbols.

(a) *Terms.*

Defect. Any specifically defined variation from a particular requirement.

Deviant. A sample unit that exceeds an upper limit (such as for various defect classifications) or fails to meet a lower limit (such as drained weights).

Sample. Any number of sample units to be used for inspection of a lot.

Sample unit. The entire contents of a container, a portion of the contents of a container or a combination of the contents of two or more containers as specified to be used for inspection.

Sample average value. The numerical value calculated by dividing the total number of applicable defects in a sample by the total number of sample units in that sample.

(b) *Symbols.*

\bar{X}_d - Minimum sample average drained weight.

LL - Lower limit for individual drained weights.

UL - Upper limit is the value which represents the maximum number of defects a sample unit may have for a grade classification.

FILL OF CONTAINER

§52.6086 Recommended fill of container.

The recommended fill of container is not incorporated in the grades of the finished product since fill of container, as such, is not a factor of quality for the purpose of these grades. The recommended fill of container for canned leafy greens is the maximum amount of product that can be sealed in a container and processed by heat to a point of proper sterilization without impairment of quality. It is recommended that the product and packing medium occupy not less than 90 percent of the water capacity of the container.

RECOMMENDED DRAINED WEIGHTS

§52.6087 Recommended drained weights.

(a) *General.* The recommended drained weight values in Table I of this subpart are not incorporated in the grades of the finished product, since drained weight, as such, is not a factor of quality for the purpose of these grades.

(b) *Method for ascertaining drained weight.* (1) The drained weight of canned leafy greens is determined when the product is at approximately room temperature (68°F.). The contents of the containers are emptied upon a dry, previously weighed U.S. Standard No. 8 circular sieve of proper diameter containing 8 meshes to the inch (0.0937, ± 3 percent, square openings). With the sieve flat on the tray, the container of product is placed open end down in the sieve in an upright position. The container is lifted off the product without spreading the product out on the sieve. The product is allowed to drain for exactly two minutes. The weight of the product and sieve minus the weight of the dry sieve is the drained weight of the product.

(2) A sieve 8 inches in diameter is used for the equivalent of a No. 3 size can (404 x 700) and smaller and a sieve 12 inches in diameter is used for containers larger than the equivalent of a No. 3 size can.

TABLE I -- RECOMMENDED MINIMUM DRAINED WEIGHTS FOR CANNED LEAFY GREENS

Container designation (metal, unless otherwise stated)	Container size overall dimensions		Capacity - weight H ₂ O at 68° F. (avoirdupois ounces)	Minimum drained weight (avoirdupois ounces)	
	Diameter (inches)	Height (inches)		LL	\bar{X}_d
8Z tall -----	2 11/16	3 4/16	8.65	4.8	5.2
No. 1 picnic -----	2 11/16	4	10.90	6.3	6.8
No. 300 -----	3	4 7/16	15.20	8.6	9.1
No. 1 tall -----	3 1/16	4 11/16	16.60	9.4	10.0
No. 303 -----	3 3/16	4 6/16	16.85	9.6	10.2
No. 303 glass -----			17.70	9.4	10.0
No. 2 -----	3 7/16	4 9/16	20.50	11.9	12.6
No. 2 1/2 -----	4 1/16	4 11/16	29.75	17.6	18.6
No. 2 1/2 glass -----			29.50	15.8	16.6
No. 10 -----	6 3/16	7	109.45	54.7	58.4

FACTORS OF QUALITY, AND SAMPLE UNIT SIZE

§52.6088 Factors of quality.

The grade of a lot of canned leafy greens is based on requirements for product characteristics with respect to the following quality factors:

- Flavor and odor.
- Color.
- Character.
- Damage.
- Harmless extraneous material.

§52.6089 Sample unit size.

(a) Compliance with the factors of flavor and odor, color, and character may be determined on: (1) the contents of an entire container, or (2) a representative subsample from containers yielding more than 10 ounces of drained weight.

(b) Compliance with requirements for harmless extraneous material other than plant material is determined on the contents of an entire container.

(c) Compliance with requirements for the factors of damage and extraneous plant material shall be determined on subsamples as specified on Table II of this subpart.

TABLE II -- SAMPLE UNIT SIZE

Style	Containers smaller than No. 2 1/2 (drained leafy greens)	No. 2 1/2 Containers (drained leafy greens)	No. 10 Containers (drained leafy greens)
Whole Leaf; Cut leaf -----	10 ounces -----	15 ounces -----	30 ounces.
Chopped -----	2 ounces -----	3 ounces -----	6 ounces.

PRODUCT CHARACTERISTICS

§52.6090 Classification of defects.

(a) *General.* Scoreable defects in the factors of color, character, extraneous plant material, other extraneous material, and damaged leafy greens are outlined in Tables III, IV, and V.

(b) *Extraneous plant material.* Extraneous plant material includes root crowns, root stubs, and seed heads of the applicable leafy green plant and harmless grass and weeds of various kinds and texture.

(c) *Other extraneous material.* Other harmless extraneous material includes grit, sand, silt, or other earthy material.

(d) *Damage.* Damage includes discoloration or other similar injury on a leaf or stem or portion thereof which damage affects, materially affects, or seriously affects the appearance or eating quality of the portion of leafy green and/or entire product.

(e) *Degrees of defect classes.* Defects are classified as to minor, major, or severe. Each "X" mark in Tables III, IV, and V represents "one (!) defect".

TABLE III - WHOLE LEAF; CUT LEAF; CHOPPED STYLES

QUALITY FACTORS	DEFECTS	MINOR	MAJOR	SEVERE
COLOR	Color appearance is: adversely affected to a degree that is noticeable ---- adversely affected to a degree that is objectionable--		X	X
CHARACTER	Appearance or eating quality, due to: (1) A mushy texture, disintegration, ragged cutting, or shredded leaves and shredded stems, or portions thereof; and/or (2) A tough texture, coarse, or fibrous stems or portions thereof; and/or (3) Any other causes, as applicable for the style, is: adversely, but not seriously, affected ----- Seriously affected -----		X	X
EXTRANEOUS	<u>Root crown:</u> Any significant portion of the solid area of the plant between the root and attached leaves -----		X	
PLANT	<u>Root Stub:</u> Any portion of the root whether or not leaves are attached -----			X
MATERIAL	<u>Seed head - Whole Leaf; Cut Leaf Styles:</u> Longer than one (1) inch or objectionable regardless of length ----- <u>Seed head - Chopped Style:</u> Pieces affecting appearance or eating quality -- More than slightly but not materially ----- Materially ----- Seriously -----	X	X	X
OTHER	<u>Grit, sand, silt, or other earthy material:</u>			
EXTRANEOUS	A trace that no more than slightly affects appearance or eating quality -----		X	
MATERIAL	Presence materially affects appearance or eating quality -----			X

TABLE IV

Quality factors	Defects	Minor	Major	Severe
WHOLE LEAF; CUT LEAF STYLES				
<i>Grass and Weeds (Aggregate Measurement)</i>				
Extraneous plant Material.	(1) Green, fine, tender, stringlike blades, and stems;			
	3 inches or less-----	X		
	More than 3 inches but not more than 8 inches-----		X	
	More than 8 inches-----			X
	(2) Green and coarse:			
	1/2 inch or less-----	X		
	More than 1/2 inch but not more than 2 inches-----		X	
	More than 2 inches-----			X
	(3) Other than green - of any texture or kind:			
	1/2 inch or less-----	X		
	More than 1/2 inch-----			X
CHOPPED STYLE				
<i>Grass and Weeds (Aggregate Measurement)</i>				
	(1) Green, fine, tender, stringlike blades, and stems:			
	3/4 inch or less-----	X		
	More than 3/4 inch but not more than 2 inches-----		X	
	More than 2 inches-----			X
	(2) Green and coarse:			
	3/4 inch or less-----	X		
	More than 3/4 inch-----		X	
	(3) Other than green - of any texture or kind:			
	Any amount-----	X		
				X

TABLE V

Quality factors	Defects	Minor	Major	Severe
WHOLE LEAF; CUT LEAF STYLES				
<i>Discoloration or other injury (affecting the appearance or eating quality)</i>				
Damage-----	Less than 1 square inch that more than slightly-----	X		
	but not materially affects.			
	Less than 1 square inch that materially affects-----	X		
	1 square inch or more but less than 4 square-----	X		
	inches that affects to any degree.			
	More than 4 square inches that affects to any-----			X
	degree.			
CHOPPED STYLE				
	Any area that materially affects-----	X		

TABLE VI (a) - WHOLE LEAF; CUT LEAF STYLES

For container sizes: Less than No.2 1/2; sample unit size - 10 ozs.		Number of defects permitted in a sample unit		
Grade classification	Defect classification	Upper limit (UL)	Maximum allowed for deviants	Sample average value
U.S. Grade A-----	Severe-----	1	2	0.25
	Major-----	4	6	1.50
	Total ² -----	8	11	4.0
U.S. Grade B-----	Severe-----	2	3	0.50
	Major-----	8	11	4.0
	Total ² -----	18	23	12.0

²"Total" - the sum of severe, major, and minor defects.

TABLE VI (b) - WHOLE LEAF; CUT LEAF STYLES

For container size: No. 2 1/2; sample unit size - 15 ozs.		Number of defects permitted in a sample unit		
Grade classification	Defect classification	Upper limit (UL)	Maximum allowed for deviants	Sample average value
U.S. Grade A-----	Severe-----	1	3	0.375
	Major-----	5	8	2.25
	Total ² -----	10	14	6.0
U.S. Grade B-----	Severe-----	2	4	0.75
	Major-----	10	14	6.0
	Total ² -----	26	32	18.0

²"Total" - the sum of severe, major, and minor defects.

TABLE VI (c) WHOLE LEAF; CUT LEAF STYLES

For container size: No. 10; sample unit size-30 ozs.		Number of defects permitted in a sample unit		
Grade classification	Defect classification	Upper limit (UL)	Maximum allowed for deviants	Sample average value
U.S. Grade A-----	Severe-----	2	4	0.75
	Major-----	8	12	4.5
	Total ² -----	18	23	12.0
U.S. Grade B-----	Severe-----	4	6	1.5
	Major-----	18	23	12.0
	Total ² -----	47	55	36.0

²"Total" - the sum of severe, major, and minor defects.

TABLE VII (a) - CHOPPED STYLE

For container sizes: Less than No. 2 1/2; sample unit size - 2 ozs.		Number of defects permitted in a sample unit		
Grade classification	Defect classification	Upper limit (UL)	Maximum allowed for deviants	Sample average value
U.S. Grade A-----	Severe-----	1	2	0.25
	Major-----	4	6	1.50
	Minor (grass and weeds)-----	4	7	2.0
	Total ³ -----	22	27	15.0
U.S. Grade B-----	Severe-----	2	3	0.50
	Major-----	8	11	4.0
	Minor (grass and weeds)-----	10	14	6.0
	Total ³ -----	51	59	40.0

TABLE VII (b) - CHOPPED STYLE

For container size: No. 2 1/2; sample unit size - 3 ozs.		Number of defects permitted in a sample unit		
Grade classification	Defect classification	Upper limit (UL)	Maximum allowed for deviants	Sample average value
U.S. Grade A-----	Severe-----	1	3	0.375
	Major-----	5	8	2.25
	Minor (grass and weeds)-----	6	9	3.0
	Total ³ -----	31	38	22.5
U.S. Grade B-----	Severe-----	2	4	0.75
	Major-----	10	14	6.0
	Minor (grass and weeds)-----	14	19	9.0
	Total ³ -----	74	85	60.0

TABLE VII (c) - CHOPPED STYLE

For container size: No. 10; sample unit size--6 ozs.		Number of defects permitted in a sample unit		
Grade classification	Defect classification	Upper limit (UL)	Maximum allowed for deviants	Sample average value
U.S. Grade A-----	Severe-----	2	4	0.75
	Major-----	8	12	4.5
	Minor (grass and weeds)-----	10	14	6.0
	Total ³ -----	57	66	45.0
U.S. Grade B-----	Severe-----	4	6	1.50
	Major-----	18	23	12.0
	Minor (grass and weeds)-----	26	32	18.0
	Total ³ -----	140	153	120.0

³"Total"--the sum of severe, major, and minor grass and weeds and other minor defects.

LOT ACCEPTANCE

§52.6092 Lot acceptance for drained weights.

A lot of canned leafy greens is considered as meeting the minimum drained weight when the following criteria are met:

(a) The average of the drained weights from all the containers in the sample meets the average drained weight in Table I of this subpart (designated as \bar{X}_d); and

(b) The number of deviants for drained weight do not exceed the applicable acceptance number specified in the single sampling plan in the Regulations Governing Inspection of Processed Fruits, Vegetables, and Related Products (§§52.1-52.83).

§52.6093 Lot acceptance for quality.

A lot of canned leafy greens shall be considered as meeting the quality requirements for the applicable grade when the following criteria are met:

(a) *Flavor and odor.* All sample units meet the requirements for flavor and odor.

(b) *Defects.* (1) The number of sample units which exceed the upper limit (UL) for these defects for the applicable grade (deviants), specified in Tables VI(a), VI(b), VI(c), VII(a), VII(b), and VII(c), does not exceed the acceptance number specified for the sample size in the Single Sampling Plan of the Regulations Governing Inspection of Processed Fruits, Vegetables, and Related Products (§§52.1-52.83); and

(2) The sample average values for the various defect classifications specified in Tables VI(a), VI(b), VI(c), VII(a), VII(b), and VII(c) are not exceeded.

(3) No sample unit exceeds the maximum number of defects allowed for deviants.

SCORE SHEET

§52.6094 Score sheet for canned leafy greens.

NO., SIZE, AND KIND OF CONTAINER

LABEL

CONTAINER OR IDENTIFICATION	CANS/GLASS										
	CASES										
NET WEIGHT (OUNCES)											
VACUUM (INCHES)											
DRAINED WEIGHT (OUNCES)											
SAMPLE UNIT NUMBER		1			2			3			
QUALITY FACTORS		Min.	Maj.	Severe	Min.	Maj.	Severe	Min.	Maj.		Severe
COLOR											
CHARACTER											
DAMAGE											
PLANT											
HARMLESS EXTRANEEOUS MATERIAL	Green fine										
	Green, coarse										
	Other										
	Seed head										
	Root crown										
	Root stub										
OTHER THAN PLANT											
TOTAL (EACH CLASS)											
CUMULATIVE TOTAL (ALL CLASSES)											
FLAVOR AND ODOR	Good										
	Objectionable										

The U.S. Standards for Grades of Canned Leafy Greens contained in this subpart became effective May 8, 1971, as amended September 1, 1973.

Dated: July 19, 1973

John C. Blum
Acting Administrator
Agricultural Marketing Service

Published in the Federal Register of April 13, 1968 (33 F.R. 5741)

Amended in the Federal Register May 8, 1971 (36 F.R. 8557) and

July 26, 1973 (38 F.R. 19957)

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